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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CERVETTI, DAVID GARCIA	
ART UNIT	**PAPER NUMBER**
2136	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/986,102	HARS, LASZLO	
	Examiner	Art Unit	
	David G. Cervetti	2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 July 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/05/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments filed July 6, 2005, have been fully considered.

2. Claims 1-23 are pending and have been examined.

Response to Amendment

3. The objection to the drawings is withdrawn. Examiner has interpreted page 7 of the amendment, "the second sheet, which includes fig. 3", as "the second sheet, which includes fig. 4".

4. The objections to the disclosure and to the abstract of the disclosure are withdrawn.

5. The objections to claims 10 and 22 are withdrawn.

6. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

7. Regarding the arguments against Cox et al. (US Patent Number 6,154,571, hereinafter "Cox"), Examiner is not using Cox to teach "combining the numerical values in accordance to a hashing function to derive a numerical value for WM_i". Furthermore, Applicant is arguing about features not found on the claim language. Examiner reads the claims in light of the specification, to thereby interpret limitations explicitly recited in the claim. The claim language is not limited to watermarks to prevent a song or track from being illicitly read from a CD, but to applying watermarks to **digital content**

(emphasis added). Fridrich et al. (NPL "Robust Hash Functions for Digital Watermarking", hereinafter "Fridrich") teaches using a hash function to derive the numerical values.

8. It was also known at the time the invention was made that songs included in a compact disc had an identification of a song (a numeric value, song title, etc). Combining values using a hash function was extremely conventional and well known in the art. Furthermore, an image was considered at the time the invention was made analogous to a song or track (an image, like a song, typically represents **a file** in a CD). Therefore, adding a watermark to a song or track would have been obvious in view of the prior art available at the time the invention was made.

9. Assuming arguendo that the combination as stated by Examiner does not disclose the claimed invention, Jacobs (US Patent Application Publication 2001/0055391) teaches watermarks for songs that include ID information of a song, name of the song, artist name, etc (page 4). Jacobs does not expressly disclose using a hash function to combine these parameters, but in view of Fridrich, it would have been obvious to combine the two, and use a hash function to create the watermark in Jacobs.

Claim Rejections - 35 USC § 103

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 1-5, 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox, and further in view of Fridrich.

Regarding claim 1, Cox teaches a method, comprising: applying watermarks $WM_1...WM_k...WM_N$ to sections of 1...k...N of digital content on a recording medium having an identification number (CDID); combining numerical values representing the CDID, N and k (column 5, 60-67, column 6, lines 1-5). Cox does not disclose concatenating values and using a hashing function. However, Fridrich teaches combining numerical values in accordance with a concatenated hashing function to derive a numerical value for WM_i; and applying the numerical value for WM_i to section i, where i is selectively each of 1...N (section 6, Generating a watermark using the hash", column 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to concatenate the numerical values using a hashing function. One of ordinary skill in the art would have been motivated to perform such a modification to generate a pseudo-random sequence of a desired length (Fridrich, section 6, Generating a watermark using the hash", column 1).

Regarding claim 2, the combination of Cox and Fridrich teaches the limitations as set forth under claim 1 above. Furthermore, Cox teaches a method of checking the watermark of section j of read digital content having watermarks applied in accordance with the method of claim 1 comprising determining the numerical values of CDID, j and

N from the read digital content, determining the watermark WM_{ja} actually read from section j, combining the determined numerical values of CDID, j and N by using the same hashing function that is used to derive WM_i to derive a digital signal for the watermark WM_{jr} that should be read from section j, and comparing the digital signal for the watermark WM_{jr} that should be read from section j with an indication of the numerical value for the watermark WM_{ja} actually read from section j (column 5, 60-67, column 6, lines 1-5).

Regarding claim 3, the combination of Cox and Fridrich teaches the limitations as set forth under claim 2 above. Furthermore, Fridrich teaches wherein CDID is read directly from the medium and WM_{jr} that should be read from section j is derived from H(CDID◊N◊j), where H is the hashing function and ◊ is the concatenation of numbers (section 6, Generating a watermark using the hash", column 1).

Regarding claim 4, the combination of Cox and Fridrich teaches the limitations as set forth under claim 2 above. Furthermore, Fridrich teaches wherein the correctness of the recorded CDID is determined by performing a calculation on value WM_{ja} actually read from section j (section 6, Generating a watermark using the hash", column 1).

Regarding claim 5, the combination of Cox and Fridrich teaches the limitations as set forth under claim 4 above. Furthermore, Cox teaches wherein H(CDID) is determined by subtracting $H(N_j)$ from the value of WM_{ja} actually read from section j (column 5, lines 59-67).

Regarding claim 9, Cox teaches a recording medium assigned with a numerical ID number (CDID), the medium including digital content, at least some of the digital

content having watermarked sections 1...i...N (column 5, 60-67, column 6, lines 1-5). Cox does not expressly disclose the watermark in section i having a numerical value in accordance with a hashed concatenated function of CDID, N and i. However, Fridrich teaches the watermark in section i having a numerical value in accordance with a hashed concatenated function of CDID, N and i (section 6, Generating a watermark using the hash", column 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to concatenate the numerical values using a hashing function. One of ordinary skill in the art would have been motivated to perform such a modification to generate a pseudo-random sequence of a desired length (Fridrich, section 6, Generating a watermark using the hash", column 1).

Regarding claim 10, the combination of Cox and Fridrich teaches the limitations as set forth under claim 9 above. Furthermore, Cox teaches wherein the digital content includes media content (column 5, lines 26-30, 59-65).

Regarding claim 11, Cox teaches an apparatus adapted to apply watermarks $WM_1...WM_k...WM_N$ to sections 1...k...N of a recording medium adapted to have an identification number (CDID) and to include digital content in at least sections 1...k...N, the apparatus comprising a processor arrangement for combining for each of 1...k...N digital signals indicative of CDID, k and N (column 5, 60-67, column 6, lines 1-5) and a write unit for applying the hashed concatenated output signal to the recording medium (column 4, 26-38, column 9, lines 40-49). Cox does not expressly disclose the signals indicative of CDID, k and N being combined in accordance with a concatenated hashing function to derive a hashed concatenated output signal. However, Fridrich teaches the

signals indicative of CDID, k and N being combined in accordance with a concatenated hashing function to derive a hashed concatenated output signal (section 6, Generating a watermark using the hash", column 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to concatenate the numerical values using a hashing function. One of ordinary skill in the art would have been motivated to perform such a modification to generate a pseudo-random sequence of a desired length (Fridrich, section 6, Generating a watermark using the hash", column 1).

Regarding claim 12, Cox teaches an apparatus adapted to check the validity of digital watermarks in sections 1...k...N, of a digital recording medium having an identification number (CDID) and digital content recorded in at least sections 1...j...N of the medium, the apparatus comprising a read unit for reading the digital content and the watermarks and for deriving digital signals indicative thereof, a processor arrangement connected to be responsive to the read unit for determining (a) the numerical value of bits WM_{jr} in watermarks that should be recorded in at least some of sections 1...j...N (column 5, 60-67, column 6, lines 1-5), (b) the numerical values of bits WM_{ja} actually read from the medium (column 5, 60-67), and (c) the relative values of WM_{jr} and WM_{ja} (column 6, lines 1-15). Cox does not expressly disclose watermarks in accordance with a hashed function of concatenated values of a determined value of CDID combined with H, j and N. However, Fridrich teaches watermarks in accordance with a hashed function of concatenated values of a determined value of CDID combined with H, j and N (section 6, Generating a watermark using the hash", column 1). Therefore, it would have

been obvious to one having ordinary skill in the art at the time the invention was made to concatenate the numerical values using a hashing function. One of ordinary skill in the art would have been motivated to perform such a modification to generate a pseudo-random sequence of a desired length (Fridrich, section 6, Generating a watermark using the hash", column 1).

Regarding claim 13, the combination of Cox and Fridrich teaches the limitations as set forth under claim 11 above. Furthermore, Fridrich teaches wherein the processor arrangement is arranged to respond to CDID as read from the medium and for determining WM_{jr} and H(CDID◊N◊j), where H is the hashing function and ◊ is the concatenation of numbers (section 6, Generating a watermark using the hash", column 1).

Regarding claim 14, the combination of Cox and Fridrich teaches the limitations as set forth under claim 12 above. Furthermore, Fridrich teaches wherein the processor arrangement is arranged for calculating the value of CDID in response to the value WM_{ja} actually read from section j (section 6, Generating a watermark using the hash", column 1).

Regarding claim 15, the combination of Cox and Fridrich teaches the limitations as set forth under claim 14 above. Furthermore, Fridrich teaches wherein the processor arrangement is arranged to respond to CDID as read from the medium and for determining WM_{jr} as actually read from section j (section 6, Generating a watermark using the hash", column 1).

Regarding claim 16, the combination of Cox and Fridrich teaches the limitations as set forth under claim 15 above. Furthermore, Cox teaches wherein the processor arrangement is arranged to determine CDID by subtracting of H(N◊k) from the value of WM_{ja} actually read from section j (column 5, lines 59-67).

12. Claims 6-8 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox and Fridrich, and further in view of Kocher et al. (US Patent Number: 6,289,455, hereinafter "Kocher").

Regarding claim 6, the combination of Cox and Fridrich does not disclose expressly wherein the value that should be read from section j is calculated in accordance with H(N◊j) to derive a first hashed function, and combining the first hashed function with the determined value of an invertible 2 argument operation that is hashed by hashing function H. However, Kocher teaches wherein the value that should be read from section j is calculated in accordance with H(N◊j) to derive a first hashed function, and combining the first hashed function with the determined value of an invertible 2 argument operation that is hashed by hashing function H (column 20, lines 55-65). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the hashed values. One of ordinary skill in the art would have been motivated to perform such a modification to provide for better security (Kocher, column 20, lines 55-65).

Regarding claim 7, the combination of Cox, Fridrich, and Kocher teaches the limitations as set forth under claim 6 above. Furthermore, Kocher teaches wherein the invertible 2 argument operation is an exclusive or function (column 20, lines 55-65).

Regarding claim 8, the combination of Cox, Fridrich, and Kocher teaches the limitations as set forth under claim 6 above. Furthermore, Kocher teaches wherein the invertible 2 argument operation is a modular addition function (column 20, lines 55-67).

Regarding claim 17, the combination of Cox and Fridrich does not disclose expressly wherein the processor arrangement is arranged to (a) calculate the value that should be read from section j in accordance with H(N◊j) to derive a first hashed function and (b) combine the first hashed function with the determined value of an invertible 2 argument operation that is hashed by hashing function H. However, Kocher teaches wherein the processor arrangement is arranged to (a) calculate the value that should be read from section j in accordance with H(N◊j) to derive a first hashed function and (b) combine the first hashed function with the determined value of an invertible 2 argument operation that is hashed by hashing function H (column 20, lines 55-65). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the hashed values. One of ordinary skill in the art would have been motivated to perform such a modification to provide for better security (Kocher, column 20, lines 55-65).

Regarding claim 18, the combination of Cox, Fridrich, and Kocher teaches the limitations as set forth under claim 17 above. Furthermore, Kocher teaches wherein the invertible 2 argument operation is an exclusive or function (column 20, lines 55-65).

13. Claims 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox and Fridrich, and further in view of Cox et al. (US Patent Number: 5,915,027).

Regarding claims 19-20 and 22-23, the combination of Cox and Fridrich does not disclose expressly wherein the number of bits in the numerical value of WM_k is in the range of 20 to 24. However, Cox et al. teach wherein the number of bits in the numerical value of WM_k is in the range of 20 to 24 (column 8, lines 43-50). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a pseudo-random noise in the range of 11-25. One of ordinary skill in the art would have been motivated to perform such a modification to protect digital content without incurring a high computational requirement (Cox et al., US Patent Number: 5,915,027, column 2, lines 36-52).

Regarding claim 21, the combination of Cox and Fridrich does not disclose expressly wherein the numerical value is represented by 20 to 24 bits. However, Cox et al. teach wherein the numerical value is represented by 20 to 24 bits (column 8, lines 43-50). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a pseudo-random noise in the range of 11-25. One of ordinary skill in the art would have been motivated to perform such a modification to protect digital content without incurring a high computational requirement (Cox et al., US Patent Number: 5,915,027, column 2, lines 36-52).

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David G. Cervetti whose telephone number is (571) 272-5861. The examiner can normally be reached on Monday-Friday 7:00 am - 5:00 pm, off on Wednesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DGC

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